

DC/DC CONVERTER

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ABSTRACT OF THE DISCLOSURE

10 An auxiliary resonance type DC/DC converter which is compact, inexpensive and highly efficient is provided. In a step-down type DC/DC converter 15, comprising two main switches 1 and 2 connected between input terminals 11 and 12 and a smoothing reactor  $L_o$  connected between a junction M of the main switches 1 and 2 and an output terminal 14, an auxiliary resonance circuit 10 in which a  
15 resonance reactor  $L_r$  and an auxiliary switch 3 are connected in series is provided between the junction M and the output terminal 14 and, moreover, capacitors  $C_1$  and  $C_2$  for resonance are provided in parallel to the main switches 1 and 2, respectively. The auxiliary switch 3 is  
20 turned on when the main switch 2 is turned off and the main switch 1 is turned on, and the electrical energy is supplied from the output terminal 14 to the resonance reactor  $L_r$ , then, the main switch 1 is turned on when a voltage  $V_{ds}$  across the main switch 1 falls to zero due to  
25 the resonance of  $L_r$  and  $C_1$  and  $C_2$ .